DETRMINANTS OF PROFITABILITY IN THE MANUFACTURING FIRM:

THE CASE OF NATURAL MINERAL WATER PRODUCING COMPANIES.

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This is to certify that the thesis prepared by Shimeles Abebe, entitled: "Determinants of profitability in the manufacturing firm: The case of natural mineral waters producing companies." And submitted in partial fulfillment of the requirement of the Master of Science degree in Accounting and Finance complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

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This is to certify that Ato Shimeles Abebe has carried out this research work on the topic of entitled “Determinants of profitability in the manufacturing firm: The case of natural mineral water producing companies” under my supervision. The work is original in nature and it is sufficient for submission for the partial fulfillment for the award of Msc. in Accounting and Finance.

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Statements of Declaration

I the undersigned declare that this thesis entitled "Determinants of profitability in the manufacturing firm: The case of natural mineral waters producing companies."In partial fulfillment of the requirement of the Master of Science degree in Accounting and Finance with the close guidance and support of research advisor. And it is my original work, has not been presented for award in any other university and that all sources of materials used for the thesis have been duly acknowledged.

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Abstract

The main purpose of this study is to examine the determinants of profitability in the manufacturing of natural mineral waters companies focused on manufacturing companies of the sector who submitted their annual financial statement report from ERCA, LTO, during the period from 2013 to 2017. Accordingly, the researcher used secondary data obtained from the financial statements (Balance sheet, profit/Loss statement.) of manufacturing of natural mineral waters producing companies, and financial publication of CSA, MOFED and MOT. In this study the researcher approach was adopted quantitative research. Least square method regression analysis performs made to examine the proposed relationship. The result of least square regression analysis showed that: Firm size, Leverage and capital intensity, Management efficiency, liquidity, Firm Growth, Inflation and Interest rate. The study had a population of 35 manufacturing of bottled mineral water companies in Addis Ababa and its area. The technique used for this study is simple random sampling method from the period 2013 to 2017 consists of 17 companies with 85 observation. The results of panel least square regression analysis showed that liquidity , interest rate , managerial efficiency , firm growth and capital intensity have significant impact on profitability whereas firm size , leverage ,inflation rate have statistically insignificant effect on profitability of producing bottled natural mineral water companies .This study conclude that managerial efficiency may have no or negative impact on profitability and the study strongly suggested that the stakeholders should have to give strong attention on the major variables of the sector like capital intensity firm growth and firm size. The findings should provide manufacturing mineral water companies` managers and CEO with valuable information for developing their strategies with regard to firm specific determinants.

Key words: ROA, managerial efficiency, Inflation rate

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List of Acronyms& Abbreviation

AACCSA	Addis Ababa Chamber of Commerce and Sectoral Association
CAPINT	Capital Intensity
CLRM	Classical Linear Regression Models
CSA	Central Statistical Agency
D-W stat	Durbin-Watson Statistics
DW	Durbin–Watson
ERCA	Ethiopian Revenue and Customs Authority
GROETH	Firm Growth
GTP	Growth Total Product
INFR	Inflation Rate
IR	Interest Rate
LEV	Leverage
LQD	Liquidity
LTO	Large Tax Payer Office
MEF	Management Efficiency
MIS	Management Information System
MOFEC	Ministry of Finance and Economic Cooperation
MOT	Ministry of Trade
NIAT	Net Income After Tax
ROA	Return on Assets
SCP	Structure-Conduct Performance

CHAPTER ONE
INTRODUCTION

This chapter conferred with the introduction which entails about the background of the study, background of natural mineral waters producing Companies, statement of the problem, objectives of the study, research hypothesis, significance, scope and limitation of the study, and structure of the thesis.

1.1 Background of the study

Company's performance evaluation is carried out through on both financial and non-financial measures. The financial measures is the most commonly used performance evaluation or the financial measure is one of the key performance indicator (KPI) of the health of the business and it is a subjective measure of how well the business can use its assets from its primary mode of the business and generate revenues and also indicates the firm`s overall financial health over a given period of time, however the financial performance is the KPI of the firm it may not tell the whole story of the company. Thus non-financial performance also affects profitability of the company like customer satisfaction, employee satisfaction.

The financial measures for performance evaluation is profitability measures, to determine firm`s profitability. Profitability ratio is a measure of profitability, which is a way to measure a company`s performance and /or the capacity to make a profit, and a profit is what is left over from income earned after we have deducted all costs and expenses related to earning the income profitability ratio analysis is a good way to measure company`s performance.

The profitability ratios are a class of financial metrics that are used to assess a business`s ability to generate earnings relative to its associated expenses. For most of these ratios or relative to the same ratio from the previous period indicates that the company is doing well. According to David and Sylvia et (2012) profitability ratios show firm's overall efficiency and measure both the profit margin that the firm is able to generate as well as the return it provides on the physical facilities and fund it employs. For any firm to continue to be in business, it should be able to generate enough revenue to cover its operating cost and make

enough profit as compensation to the providers of capital. Every firm is most concerned with its profitability. Profitability indicates how well management of an enterprise generates earnings by using the resources at its disposal. In the other words the ability to earn profit i.e. profitability, it is composed of two words profit and ability. The word profit represents the absolute figure of profit but an absolute figure alone does not give an exact ideas of the adequacy or otherwise of increase or change in performance as shown in the financial statement of the enterprise. The word 'ability' reflect the power of an enterprise to earn profits, it is called earning performance.

Performance at microeconomic level is the direct result of managing various economic resources and of their efficient use within operational, investment and financing activities. To optimize economic results, a special attention should be given to the proper grounding of managerial decisions. These should be based on complex information regarding the evolution of all types of activities within the company. A synthetic picture of the company's financial position and its performance is found in the annual financial statements, which therefore become the main information sources that allow the qualitative analysis of how resources are used during the process of creating value. In order one company to run on a long-term performance way, it is needed to develop, implementation and maintaining the strategies, measures and coherent policies from economic and financial point of view, resulted from a good knowing of internal and external specific conditions in which the firm acts. The qualities of managerial options depend by the ability of identifying those elements that productively used could lead to increasing of the results and performance (Burja, 2011).

1.2 Background of bottled mineral water producing companies in Ethiopia

One healthy person is supposed to drink two liters of water every day, according to the World Health organization. Meanwhile in the case of Ethiopia all bottled water factories operating in the country are providing around 100 milliliters of water per head per day when their total production is divided to the total number of Ethiopian population, which is close to 105 million. All together the water bottling companies produced close to 3.5 billion bottles of water per year serving only 5% of the Ethiopian`s population. A decade ago the idea of bottled water for many Ethiopians was a trend that characterized the Diaspora and the modern, wealth-driven way of life. Nowadays things are dramatically changed in the country and water has become by far, one of the most sellable products in the country. Today it is common to see people who purchase bottled water along with their groceries in super market and kiosks. Young people ordered bottled water in cafes and restaurants. In several offices, bottled water also has become another choice in addition to the 'tea' or 'coffee' moreover bottled offered by secretaries to visitors.

Now, around more than 50 bottled waters producing companies are operating in Ethiopia. According to central Statistics Agency (CSA) 2010/2011 survey, about 51 soft drinks and bottled water manufacturing companies have been registered with a capital of ETB 1,106,223,000.00

According to MoFED`s 2012/13 report on economic performance, the per capita income of Ethiopians has reached USD 550 from merely USD100 a decade ago, this implies the general economic growth the country registered shows one factor of this growth.

Many factors, such as the growing number of conference and summits in Addis Ababa, the increased tourist traffic, and the expansion of the hospitality sector have been contributed for this growth. This can be seen in the growth of the number of bottled water producing companies from 13 in 2006/7 to 53 in 2010/11. Further, according to the source of Ministry of Industry, several other companies are in the pipe line to join the industry. (CSA abstracts report, 2016)

A bottled water producing plant can be established with a capital of USD800, 000 to 1.6 million depending on the size and capacity of production. For example a project that produced 600,000 bottles per hour with 600ml bottle would cost around USD800, 000.00

One distinct feature of bottled water products is that the production and marketing is not confined to Addis Ababa, as quite common with other products. Many new companies are also eyeing this sector this is a huge gap between demand and supply of bottled water.

According to CSA 2016 annual report, the number of manufacturing of bottled water companies in Ethiopia increased dramatically and has contributed much to the growth and development of Ethiopian economy. It has also offered emerging employment opportunities and participating in social responsibilities. While consumption of bottled water is on rise, consumers have also become more refined in demanding more products. The market gap, high demand for these product and other positive economic and political opportunities attracted national potential and foreign investors and companies for investment in the country. In point of view of the heavy investment which is necessary for the success of manufacturing bottled water industries, profit in the accounting term sense tends to become a long term objective which measures not only the success of the product, but also of the development of the market. Thus this research focused to study the determinant of profitability in the large manufacturing bottled water companies in Addis Ababa and surrounding areas. The motive behind to undertake this research paper is to provide some identification of the factors which affects profitability.(2015/16 CSA report)

1.3 Problem statement

Profitability is essential for any firm from both shareholders and economic point of view because as the firm grows or performs well in terms of profitability, it will have strengthening dividend payment to owners, improve capital structure, safety and soundness of the financial operation, increase employment opportunity, tax payment and other positive impact on shareholders and other stake holders. Profitability is a leading indicator, as such, measures ultimate performance of industries and is an important area of review by the regulatory bodies. Apart from assessments made by investors, creditors and other stakeholders to ensure its sustainability, it helps the industries to understand scale and scope of their activity and enabling them to position and take appropriate actions to stay competitive in the market. Profitability determinants are forces that directly impact the profitability of a firm, and as such are useful tools for relevant firms to understand what

needs to be done and where they should focus in order to improve on the profitability of their business. The study took the researcher attention that this manufacturing sector contribution in the country's economy is huge as compared to other manufacturing sectors as exhibited and modified from (CSA, 2016 abstract report). However, the sector doesn't show consistent profitability trend and some are not even profitable based on the data evidenced from ERCA 2016. Henceforth to identify the factors which determine the profitability are the one which desire clarification from this research paper. (Imeokparia , 2015) explored the impact of working capital on the operation of an organisation particularly the bottled mineral water firms in Ethiopia the study aimed at determining if there is any relationship between management efficiency and the performance of the bottled water industry in Ethiopia sought to analyse perceived effects of selected independent variables on the bottled natural water manufacturing sector in Ethiopia. Signifying that determinant which affect the profitability of bottled mineral water have not yet been sufficiently investigated. Though taking this into consideration the insufficiency of empirical investigation on the extent determinants of food and beverage companies' profitability, the researcher attempts to give some insight contribution and enhance new findings of this area of research for Ethiopian companies in order to fill the knowledge gaps in empirical evidence. In addition, during this time where Ethiopia is attracting more investment as a business and world tourism destination that bottled water investments has become the rewarding market for the sectors investment. (ENA, 2016).

To sightsee the determinants of profitability (firm size, asset growth, leverage, liquidity, capital intensity managerial efficiency interest and inflation rate); it becomes an interesting topic for the researcher to deploy empirically founded studies particularly on bottled mineral water companies.

Research objectives

Research objective as an accurate description of specific actions a researcher will take in order to reach a purpose. Research objective outlines the specific goals to study plans to achieve when completed. Accordingly, this study has general and specific objective that will be addressed

Major objective

The Major objective of this study is to assess and evaluate the determinants of bottled natural water manufacturing company profitability in Addis Ababa.

Specific objectives

The following are specific objectives which are an integral part of the main objectives of the study. These are:

i. To measure the extent to which firm specific factor i.e. firm size, firm growth, leverage, liquidity,… and other firm affect profitability of natural mineral waters producing companies.
ii. To investigate on the relationship between the variables mentioned in determining profitability and impact of those factors on the profitability of the manufacturing companies.
iii. To associate those determinants according to their degree of influence on profitability of bottled natural mineral waters manufacturing companies.

Hypothesis Development

Based on the above mentioned general objectives of the study and specific objectives the following hypothesis are developed to be tested, thus this paper aims to determine the determinants of profitability on the case of manufacturing bottled natural mineral waters companies and a research hypothesis is developed in a line to the premier objective of the study as indicated below:-

H1: Size has a positive significant effect on profitability of manufacturing natural mineral water producing companies.

H2: Leverage has a negative significant effect on manufacturing natural mineral water producing companies.

H3: Firm growth has a positive significant effect on profitability of manufacturing natural mineral waters companies.

H4: Capital Intensity has a positive significant effect on profitability of manufacturing natural mineral waters producing companies.

H5: Managerial efficiency has a positive significant effect on profitability of manufacturing natural mineral water producing companies.

H6: Liquidity has positive significant effect on profitability of manufacturing natural mineral waters producing companies.

H7: Inflation has a negative significant effect on manufacturing natural mineral waters producing companies.

H8: Interest rate has a negative significant effect on manufacturing natural mineral waters producing companies.

1.6 Significance of the study

The main reason for this study is that most of the researchers have not yet given emphasis on specific areas in Ethiopia related to the issue concerning determinants of profitability. Most studies had previously focused on manufacturing sectors in general. Therefore this study gives some inspiration on scarcity of the study in Ethiopia and also would have an ultimate significance to show the degree of the manufacturing of bottled mineral waters internal (firm specific) factor determinants, in what extent it affect the profitability of the specific sectors, by identifying and showing the main determinants of profitability and to suggest policy implications after critical examination of the study on the area of this sectors in the country. To this end, the study is believed to have the following importance:

It enable and help policy makers and management bodies of bottled mineral water companies to adjust their management system and mechanisms, capitalize on other, like strong demand and cost expressing that improve performance. After the assessment of this study it would allow for the government to discover the status and the performance of state owned bottled mineral waters sectors and measures their competitiveness in terms of profitability with privately and share owned companies and help them to pass policy implication. It would had benefit investors to measure the performance of their portfolios and proceed with re-adjustments as required and it would provide a road map for managers and shareholders to evaluate their industry performance in terms of profitability with respect to the above listed determinants. Moreover the findings of the research also served as an input for the research beginners and academician who are interested in this area to conduct their research.

1.7 Scope of the study

The study encircled to examine the determinants on profitability of bottled mineral waters manufacturing companies. Specific focus area of large manufacturers and producers which report their annual financial statements to Ethiopian revenues and customs authority large tax payers' office (ERCA/ LTO) in Addis Ababa.

The researcher delimited to find enough organized information from the responsible sectors and other stakeholders. Besides, as institutions the sector government agencies lack of systematization, took the researcher time to organize and structured the resources received. In addition to that the researcher used the time period to analyze the financial statements starting from 2013 to 2017 fiscal year.

Limitation of the study

The study also addresses only on companies which report their financial statement in Addis Ababa office make the researcher constrained to access deeply on the area of research being most bottled mineral waters manufacturers are the infant business for the country and most of the companies are unwillingness to show their annual report and co-operative being afraid of different factors. Therefore the researcher is supposed to analyze only the manufacturing of bottled mineral waters companies their annual report is found in LTO Addis Ababa.

1.8 Structure of the study

This research paper is structured in four main chapters. The first chapter composed; background of the study, background of bottled mineral waters , problem statement, objective of the study (major objective, specific objective),hypothesis, significance, scope and limitation of the study. The second chapter presented the related literatures. The third chapter comprised research methodology; data analysis and presentation procedure in relation to the determinants of bottled mineral water manufacturers' profitability is exhaustively presented. The fourth chapter presented results and discussion and findings of the paper. The fifth chapter forwarded the previous sections, conclusion and recommendation of the research.

Chapter Two
Related Literature

In this section the researcher focused on the review of the related literature and establishes theoretical and empirical foundations on which the study had leaned. Specifically, literature review covered theoretical analysis composed of the concept of profitability, measurement tools of profitability and models of firm profitability and other related relevant issues to the study in hand has discussed. Moreover, it had uncovered the gap and how this particular study contributed to fill the same.

2.1 Theoretical review

No general theory of profitability that provides a unifying framework for the study of determinant of profitability in the manufacturing of bottled mineral waters companies. Because of this reason, this study reviewed some theories which are closer to the concept of profitability and its determinants. The theoretical frame work upon which this study is covered the concept of profitability, measurement tools of profitability the models based on profitability that is the structural approaches which investigate behavior of market regarding to profitability. A structural approach was mainly focused on the structure-conduct performance (SCP) model and firm- effect model which is the result of the distribution of firms and firm profits. Structural approach has investigated how the market concentration weakens the market competition by fostering collusive behavior among firms (Miller 2016).

The concept of profitability

Profitability means ability to make profit from all the business activities of an organization, company, firm, or an enterprise. It shows how efficiently the management can make profit by using all the resources available in the market.

According to Harward & Upton, "profitability is the 'the ability of a given investment to earn a return from its use." However, the term 'Profitability' is not synonymous to the term 'Efficiency'. Profitability is an index of efficiency; and is regarded as a measure of efficiency and management guide to greater efficiency. Though, profitability is an important yardstick for

measuring the efficiency, the extent of profitability cannot be taken as a final proof of efficiency. Sometimes satisfactory profits can mark inefficiency and conversely, a proper degree of efficiency can be accompanied by an absence of profit. The net profit figure simply reveals a satisfactory balance between the values receive and value given. The change in operational efficiency is merely one of the factors on which profitability of an enterprise largely depends. Moreover, there are many other factors besides efficiency, which affect the profitability. Franks and Broyles "The expected return from the capital markets represents an opportunity cost. Since incrementally companies can employ their funds in the capital market. That market provides the appropriate reference point against which to measure profitability. Put another way a profitable investment project is one which provides a return sufficient to attract capital from the capital market". Profitability is distinguished from "Profit". Profit refers to the absolute quantum of profits. Whereas, the profitability refer to the ability to earn profit. W. M. Harper Profitability is a relative measure; it indicates the most profitable alternative. Profit on other hand, is an absolute measure, it indicates the overall amount of profit earned by a transaction. Very high profit does not always indicate a sound organizational efficiency and low profitability is not always a sign of organizational sickness. (Tulsian, 2014).

Measurement tools of Profitability:

Measurement of profitability of a company is ratio i.e. "profitability of assets variously referred to as earning power of the company return on total investment or total resources committed to operation." (Murthy 1978).

According to Murthy V.S. "The most important measurement of profitability of a company is ratio i.e. profitability of assets variously referred to as earning power of the company return on total investment or total resources committed to operations." According to Block and Hire "The income statement is the major device for measuring the profitability of a firm over a period of time." Some managerial decisions like rising of additional finance, further expansion, problem of bonus and dividend payments rest upon this measurement. It can be measured for a short term and long term. Profitability provides overall performance of a company and useful tool for forecasting measurement of a company's performance. The overall objective of a business is to earn a satisfactory return on the funds invested in it, while maintaining a sound financial position, profitability measures financial success and efficiency of management."

Significance of Profitability:

The aim of a firm is to derive maximum profit. Profit and profitability play the same role in business as blood and pulse in human body. Without adequate blood and ability to generate blood, human existence is not possible. The same is true for any business. It is very difficult for a firm to service without prospects and ability to earn adequate profit. The profitability is the most powerful motive factor in any business. Any company goal is to maximize profit or not the users of accounts are certainly interested in its profitability. Therefore the overall objective of a business to earn at least a satisfactory return on the funds invested, in it, consistent with maintaining a sound financial position. (Stierwald, 2009)

Profitability is the product of two factors and therefore maximum or operating profit can be earned only by maximizing them. In technical terms the combination of these two factors is known as the triangular relationship. Its significance exits not only in its use as an analytical tool but also because the profitability ratio can be calculated directly from the specific earnings and investment data (Rajkot, 2011)

Model of firm profitability

The four models of firm profitability originate in traditions that view the economic world in very different lights. The first emphasizes the structure of the market in which the firm operates, the second points to the firm's share of that market, the third focuses on the firm's risk class, and the last emphasizes resource scarcity and intertemporal arbitrage nevertheless, although some are better characterized as searches for empirical regularities, all can be rationalized by economic theory. Only the first, however, predicts a causal relationship between industry concentration and firm profitability. Furthermore, only the first interprets the existence of high profits as evidence of monopoly power. (Stierwald, 2009)

Models of firm profitability can be classified into two major groups, structure-conduct performance (SCP) and firm effect models. In the SCP model the market structure determines firm behavior and profitability. In firm effect models, market structure is the result of the distribution of firms and firm profits. (Stierwald, 2009)

The SCP model is embedded in neoclassical theory and asserts that firms in concentrated industries are more profitable than firms in perfectly competitive markets,(Bain 1951).

A reason for that can be that high industry concentration facilitates the exertion of market power, for example in the form of monopoly pricing. Colluding firm impose a higher markup on those goods with lower elasticity of demand without suffering the loss of demand to competitive rivals. The increased price allows firms to earn profits that exceed competitive rates. Due to the restricted quantity of supply, industry concentration and high profits are associated with sub-optimal welfare levels. (Slade E., 2003)

The fundamental assumption in firm effect models is that firms are heterogeneous. According to the superior firm hypothesis, introduced by Demsetz (1973), firms can be distinguished with respect to their level of cost- or production efficiency. Efficient firms have a competitive advantage over their non-efficient rivals. Higher levels of cost-efficiency can be caused by lower costs of production, economies of scale or higher quality of products.

In the Demsetz model, superior performance can exist for some period of time. Potential reasons for that can be the firm's reputation, complex organizational structures, resource heterogeneity, factor immobility or uncertainty of investments. Jovanovic (1982) argues that only efficient firms survive, stay in the market, grow larger and obtain a higher market share.
At the same time, efficient firms are more profitable than non-efficient ones.Peltzman (1977) asserts that high market concentration, in the form of high market shares,and high firm profitability occur simultaneously and are the result of the same cause, differences in productivity levels. Markets function competitively, and no collusion between firm takes place that restricts supply or enables firms to raise their price above marginal costs. For this reason, high firm profitability is not necessarily associated with welfare losses in firm effect models.
There has been a substantial amount of empirical research undertaken in the area of profits market structure and firm-level effects. Taken together, the evidence suggests that both SCP and firm effect models are plausible. This implies that industry effects, such as concentration and entry barriers, and firm effects, such as productivity differences or strategic management, are empirically important. Depending on the study, firm-level or industry-specific effects are found to be the dominant factor on firm profitability. (Stierwald, 2009)

Empirical review

Firm size and profitability

Size of a firm is the amount and variety of production capacity and capability a firm possesses or the amount and variety of services a firm can provide simultaneously to its clients. The size of a firm is very important in today's world due to the phenomenon of economies of scale. Larger firms can produce items on much lower costs in comparison to smaller firms. Firms of the modern era look to increase their size in order to get a competitive edge on their competitors by lowering production costs and increasing their market share. The willingness of firms to expand in terms of size depends upon a number of external and internal factors such as the political and judicial situation of the country in which the firm is operating but in stable countries it largely depends upon the availability of internal and external sources of financing and the current market standing of the firm and the effect of applying those new resources upon the share price and market standing of the firm (John & Adebayo, 2013).

According to Niresh, A., and Thirunavukkarasu large sized firms are in a position to generate both internal and external sources of financing. Hence, they have the option to decrease the debt which would result in a better market standing, firm value and share prices. On the other hand employing debt might provide leverage and increase profitability. Profitability is the amount of money a firm can generate with whatever resources the firm possesses.

Firms in a market economy vary widely in size, profitability, and duration. What are the factors determining these observed variables, and how they operate, has been active topic of research in industrial organization and more generally in economic theory (Luttmer2010, Sutton, 1997, Provide a survey of some of the main theories and findings in this area.). It is known that the distribution of the firms' size is highly skewed to the right (Quandt and firms, 1966) and follows approximately a power law (Gabaix2009): the number of firms with *n* or more employees is approximately 1/*n* to some power a little larger than 1.

This distribution is stable, and is very different from the prediction of an approximately unique firm size that can be derived from *u*-shaped average cost curves (Hymer, Pashigian, 1962, Viner, 1932). One possible explanation is an underlying stable factor inducing this distribution. This is the strategy pursued by Lucas1978) (see also PrescottandVisscher1980 and Rosen1982). A positive relationship between firm size and profitability was found by

Vijayakumar and Tamizhselvan (2010). In their study, which was based on a simple semi-logarithmic specification of the model, the authors used different measures of size (sales and total assets) and profitability (profit margin and profit on total assets).

In Lucas' model it is a managerial skill or talent each agent in a population is endowed with, which is drawn from a probability distribution. Given their talent agents choose the type of employment, between employment as worker, earning equilibrium wage, or being a manager/entrepreneur, earning profit of the firm they manage. A firm consists of a manager, which employs capital and labor to produce output. A type of firm is identified by the skill of the manager, which multiplies output.

The equilibrium of this model has a simple characterization: agents with skill larger than threshold become managers, the other workers. At equilibrium, marginal products of both factors are equal across firms, and so is capital labor ratio. By the previous result, firm size can be measured equivalently by capital or labor or output, and is increasing in the skill factor.The theory provides a link between the distribution of the managerial skill and, for a given technology of production and control, observed variables, such as profits, size and managerial skill. A test of the theory should presumably be a test of this link. However, whereas wages, profits, allocation of capital and labor are all observable, the managerial skill can only be observed indirectly, through its effects on the type of employment of the agent and, if he is a manager, on size, profitability and duration of the firm. Thus, a direct test is impossible, unless one is willing to conjecture possible measurements, independent of firm's performance of this skill. This is what we plan to do here (John & Adebayo, 2013).

There are additional important questions that the theory is forced to leave unanswered, and that we address. The first is what precisely is the mechanism through which the managerial skill affects the economic life of a firm? In Lucas' model, managerial skill is equivalent to a total productivity factor, multiplying the production function after the decreasing returns due to the constraints of span of control are taken into account. Other ways in which the skill operates are possible. Knight (1921)identified the skill with the ability to deal with uncertain, as opposed to risky, choices. If we do introduce uncertainty (or ambiguity), the attitude to risk might be an important factor in explaining an entrepreneur's career choice, and his success in the business: an entrepreneur has, among other qualities, a willingness to take risks. This would make however a poor explanation: being reckless is hardly a sufficient condition for success in business, since at least the ability to identify profitable opportunities among the many risky ones is also required. Hence perhaps a combination of willingness to take risks and good

cognitive skills is required. Since these characteristics are in some measure correlated (Burksetal, 2009), this is a plausible conjecture, and we provide some evidence below. So far it has been identified that managerial qualities with skills, in a model where profit maximization is the only criterion managers want to maximize. A different view proposes that the distinguishing feature of a manager is the preferences he has: these preferences explain both his decision to be a manager in the first place and his subsequent decisions as leader of the firm. For example Baumol (1959) suggests that for larger oligopolistic firms, managers may have a different set of objectives than profit maximization, like maximizing sales (or total revenue) subject to a profit constraint, Other examples of this literature, that deals with managers of large firms, are Schumpeter (1911–1934) and the idea of managers as empire-builders, Marris (1964) and Baumol (1959), with the idea that managers may have growth instead of profit maximization and, along the same line, Williamson (1974). The free cash flow theory (Jensen, 1986) predicts specifically that managers may have incentives, and the means to satisfy them, to cause their firms to grow beyond their optimal size. As we noted, this literature analyzes incentives and behavior of corporate managers and in particular the conflict of interest with shareholders, presumably because for small firms the constraint of competition is stricter: but the motivations like desire for power, status and prestige already emphasied by Baumol (1959) and Williamson (1963) among others, is likely to be present in managers of small firms too, as it is in the general population.

Leverage and Profitability

Financial leverage addresses a company's level of financial risk exposure. Based on how a company finances its operations, leverage is a tool that creates the opportunity to be more profitable in the long term. However, this is met with increased exposure to risk and higher short-term expenses. To capitalize on this opportunity, a company leverages its short-term position by utilizing debt.

Alalade, S.A and Oguntodu, (2015) there are two methods of business financing: debt and equity. If a company needs to buy more inventories, it could pay for the goods by taking out a loan or using the owner's money. The issuance of stock is an example of equity in which the owner has an underlying ownership stake in the company. Alternatively, the utilization of debt increases the company's underlying risk, but it preserves the previous equity positioning. This

is the essence of financial leverage: increasing the risk within the company to yield potentially higher net income for the existing owners.

The main risk of leverage becomes apparent as a company takes on too much debt. The amount of leverage a company incurs should be directly related to its liquidity and solvency. If a company takes on too much debt, it will be unable to meet its payment requirements with its short-term and long-term cash flows. In addition, as a company takes on more debt, the cost of borrowing more money increases through higher interest rates. The stock price or equity valuation of a company will be reduced based on the overall risk of the company as it incurs more debt. However, when it is used properly and within safe constraints, financial leverage can be beneficial to a company. Utilizing low interest rates, a company can raise money inexpensively. From a long-term perspective, the owners will benefit from having less equity as the result of adding other owners. The company must weather the added costs of debt to experience the benefits of financial leverage.

Expenses which may lead to an operating leverage. On the other hand, the total leverage of a firm is affected by both fixed operating expenses and fixed financial expenses. In fact, the variable cost is beyond the control of the management because it varies as per the volume of sales made or services provided. However, the fixed cost can be controlled, and relatively lower fixed cost is an indication of managerial efficiency. The firms with higher fixed cost are exposed to higher leverage, and ultimately it may affect the profitability as well. However, the degree of impact towards the profitability resulted by the leverage may be determined by the Operational effectiveness of the firm. The empirical evidences emphasize that there is a Value Relevance for accounting information (Vijitha P. and Nimalathasan B, 2014, and Karunarathne W.V.A.D. and Rajapakse R.M.D.A.P, 2010).

Alghusin (2012) if there is such, investors would not demand for stocks of highly leveraged firms, and lower demand for shares will decrease the share prices. The declined share prices result in lower market performance. Accordingly, the objective of the current study is to examine the influence of leverage for a firm's profitability and its performance in the stock exchange. The standard measure of leverage is total liabilities to equity. However, liabilities are taken in to account as a single amount in this measurement. Some of these liabilities arise because of the financing activities e.g. bank loans, bonds issued etc. and the others arise as a result of the operating activities e.g. trade payables, deferred revenues and pension liabilities etc. When considering the financing liabilities, they are traded in well-functioning capital markets. On the other hand, firms can add value in operations because operations involve

trading an input and output that are less perfect than the above mentioned capital markets. Thereby, when analyzing the equity, there are significant reasons for distinguishing the operating liabilities from financing liabilities.

Liquidity and profitability

One of the main issues regarding the working capital management is the tradeoff between the lower profitability of current assets and the financial slack provided from it (Beranek, 2003, p.18). According to AssafNeto (2003, p.22), the liquid assets are usually less profitable than the fixed assets. Investments in working capital do not generate production or sales.

According to Eljelly (2004, p.2) the management of working capital becomes even more important during crises periods, "liquidity management is important in good times and it takes further importance in troubled times." Also according to him, the efficient management of the liquidity levels of a company is of extreme relevance for the firm's profitability and well-being. Ross (2000) and Gitman (2003) also corroborate this idea, confirming a tradeoff between high amounts of net working capital and maximizing profitability. This dilemma would be a consequence of the fact that high values used in current assets tend to generate costs for maintenance, not directly adding value to the company and thereby generating profitability. It is thus a dilemma for managers between liquidity and profitability demonstrated by a negative relationship between two variables. However, Hirigoyen (1985) argues that over the medium and long run the relationship between liquidity and profitability could become positive, in the sense that a low liquidity would result in a lower profitability due to greater need loans, and low profitability would not generate sufficient cash flow, thus forming a vicious cycle. Pimentel et al (2005, p.86) states that in his article Hirigo yen only develops this idea into a theoretical way, grounding his theory in order to deduce, logically, the results of this possible long term influence, without, however, apply it empirically in companies. Thus, the empirical investigation of this theoretical construction will be the main aim of this study. First I will try to observe if it is true that on the short run it is observed a negative relationship between liquidity and profitability, and then if on the medium term this correlation becomes positive.

Capital intensity and profitability

Capital intensity is the amount of money invested in order to get one dollar worth of output. The more capital applied to produce that same unit the more capital intense the firm is said to be. There are some industries that are considered to be more capital intensive and in those industries, increasing the capital intensity results in improved quality of production and on time production. Now to increase the capital intensity of a firm the managers have to scavenge for the right financing alternative, to increase their market share and at the same time the market value. Firms do look to increase their capital intensity and improve quality as a result but getting the right mode of financing for this purpose becomes significant, because if the right mode is not selected it might prove counter productivity and might adversely affect the standings of the firm. Increased profitability is the most desired and ultimate reward for all the hard work and planning of a firms management and they are constantly on a look to find ways to increase it. Profitable firms can expand in size by generating internal sources of financing. They attract investors from the market and are better able to negotiate the prices of additional financing and get better bargains. However they have to be careful in the choice and price of financing as it affects their market standing and share price. The more they go for debt financing the more risk gets involved and the future gets uncertain which affects their share prices and market standing as the investors get detracted. Considering the challenges associated with debt financing for the firm, and the benefits associated to size, capital intensity and profitability, this study looks into how capital intensity, size of firm and profitability affect the debt a company employs in its capital structure and how does a firm debt financing is affected when the size, capital intensity and profitability of a firm is changing.

Mitoo (2004) looked into how financial flexibility is viewed by managers while coping with the global financial recession. The study found that higher flexibility results in better handling of the situation. Hence, firms should look for optimal flexibility in order to coup with extreme situations. The study suggested that higher internal financing results in greater flexibility in such firms. Arlbjorn(2011) discussed the different approaches of total cost of ownership and how it affects the size of the firm. The study concluded that the effective use of total cost of ownership can increase the size of firm. Papadogonas (2009) found the relationship between size of firm, sales growth, investment, leverage and current assets with profitability. The research concluded that profitability had positive relation with size of firm, sales growth, investment and negative relation with leverage and current assets. Haggar (2010) used

stochastic frontier production model in order to find out the sources of total factor productivity growth. It was found that negative changes in efficiency have brought the average productivity growth down. Bond and Scott (2006) tested two theories of the capital structure decision. This research concluded that where firms employ external financing, debt is generally used for financing the needs. They also concluded that the financing deficit variable of the pecking order theory is unable to alter the significance of other factors and offers no empirical significance in this context. Guney (2003) analyzed that profitability of firms exerts a negative impact on their capital structure and positive relation between leverage and tangible assets also the empirical findings supported the predictions in the literature that firms with greater growth opportunities have lower leverage ratios. Another salient and interesting finding is that size exerts uncommonly a negative impact on firms' debt ratios. Altunbas, Kara and David (2009) studied what financial factors are usually considered while issuing loans. They conducted the study on non-financial corporations, covering the period 1993-2006. They found that large firms having more financial leverage, extensive profits and more liquidation values generally prefer loan financing. Firms employing more short-term debt are having more growth opportunities.

Myers and Majluf (1984) discussed that due to informational asymmetries firms prefers internal to external fund sources. This suggests that the companies with high profitability be inclined to avail internal financing for investments rather than using external financing. Fox (1998) studied to what extent leverage levels vary with the firm size. The study concluded that small firms find it very difficult to find external sources of financing at good costs. An internal source of financing was the most preferred source of financing by small firm managers as compared to debt financing. Fraering and Minor (1994) found the relation among market share and profitability. The results showed a mixed trend. In total 41.7 percent of firms earned high profitability with high market share. Bergendahl (1995) discussed the principals that are important for profitability in case of banks that adopt bancassurance. The research concluded that banks with larger customer base benefitted more from giving bancassurance and increased their profitability and customer loyalty. Almeida and Campello (2007) predicted that there is an inverse relationship among internally generated funds and the need for externally generated funds. The literature argued the consistency of this result with a preference for internally generated funds to finance investments, when externally generated funds are expensive. However, there are evidences suggesting the negative relationship among firms that are facing high costs of external financing.

Managerial efficiency and profitability

Managerial efficiency is usually defined in terms of enterprise efficiency which is not necessarily a good practice. A number of organizations have regularly paid dividends to satisfied owners only to suddenly end up in bankruptcy (Hartley, 2007, in Russian; Rampersad 2006, in Russian). These events demonstrate that shareholder value and annual profits are not sufficient measures of corporate efficiency and point to the need for better measures.

Management theoreticians agree that efficiency is a ratio of effect achieved to costs. The historical perspective suggests that within scientific management, managerial effect is a raise in employee productivity (Taylor, 1911) while administrative management place emphasis on subordination within a company (Fay ol, 1930; Barnard, 1938). The idea of formalization of management occurs within the quantitative management perspective so the managerial effect is measured in monetary units.

This proved to be impossible in some cases due to the fact that some quantitative models require unrealistic or unfounded assumptions (Griffin, 1999). In spite of that some researchers suggest measuring managerial efficiency as the ratio of additional profit company from a decision to the cost of the decision (Gorshkova, 2003, in Russian; Egorshin, 2008, in Russian; Vasilyev, Parachina, Ushvitsky, 2006, in Russian). The other problem with managerial efficiency estimation is that some modern management theories measure efficiency by only one measuring scale. This point was emphasized by Brogan (Brogan, 2003)

The example of such theory is value-based management which emphasizes that the main measuring instrument is shareholder value. Though it is stated that value-based management is to be used in cooperation with balanced scorecard (Asheworth, James, 2006) the empirical data shows that application of the approach resulted in achieving high shareholder value despite the postponed costs it may produce. One must wonder the measurement systems that led Enron to its demise. This and other current crises emphasize the idea of measuring managerial efficiency by more than one scale. A number of researchers explore the relation between managerial efficiency and different factors that influencing it. For example, Klein (Klein, 2002) finds that more independent board members have higher quality accruals. Huanget al. (2006) examines the relationship between earnings and CEO reputation while Bertrand and Schoar (2003) estimates the influence of management style on managerial efficiency.

Demerjian, Lev and McVay (2006) examine the relation between managerial ability and earnings quality and provide arithmetical instruments for measuring this relation. There also

are works on the relation between managerial efficiency and human capital, (Dawson and Dobson, 2002) and give an instrument for estimating it. The problem of finding a balance within enterprise's management was first introduced by Norton and Kaplan (2005, in Russian) and was afterwards used as part of consulting projects. The concept was extended by other researches such as Rampersad (Rampersad, 2005, in Russian) andNiven (Niven, 2005, in Russian). The main idea is that both financial and non-financial measures are to be mixed in measuring the efficiency of a firm. Olve, Roy and Wetter (2006, in Russian) provide a mechanism for applying strategic cards to different industries and emphasize the relation between balance and company results. Some issues associated with using balanced scorecard technology for enterprise's efficiency management are introduced by Gershun and Gorsky (2006, in Russsian). Especially the ratio between financial and non-financial indicators within a scorecard and the balanced model used within cultural transformation tools. (Barrett, 1997) estimates the influence of value balance and company success.

Inflation and Profitability

Inflation is a sustained increase in the general price level of goods and services in a company over a period of time. When the period of price level rises, each unit of currency buys fewer goods and services; consequently, inflation reflects a reduction in the purchasing power per unit of money. Inflation affects economies in various positive or negative ways. The negative effects of inflation include an increase in the opportunity cost of holding money. Uncertainty over future inflation which may discourage investment and savings, and if inflation were rapid enough, shortage of goods as consumers begin hoarding out of concern that prices will increase in the future. Positive effects include reducing unemployment due to normal wage rigidity, allowing the central bank more leeway in carrying out monetary policy, encouraging loans and investment instead of money hoarding, and avoiding the inefficiencies associated with deflation. Economist generally believes that the high rates of inflation and hyperinflation are caused by an excessive growth of the money supply. Today most economist favor a low and steady rate of inflation, low inflation reduces the severity of economic recession by enabling the labor market to adjust more quickly in a down turn. Since there are many possible measures of the price level, there are many possible measures of price inflation. Most frequently, the term inflation refers to a rise in a broad price index representing the overall price level for goods and services in the economy. The consumer price index (CPI) is one of examples of broad price indices.

Interest rate and Profitability

Interest is payment from the borrower or deposit taking financial institutions to a lender or a depositor of an amount above repayment of the principal sum, at a particular rate it is distinct from a fee which the borrower may pay the lender or some third party. Interest differs from profit, in that interest is received by a lender, whereas profit is received by the owner of an asset, investment or company.

Gap on Literature

In the manufacturing sector of bottled natural mineral waters have not been contacted made such studies so the researcher has to made to visit some related studies concerning about the topics on the determinants of profitability on the manufacturing of natural mineral water companies. Studies held on countries like Canada, Japan, India, Sirilanka, Jordan, Nigeria, Kenya and few studies in Ethiopia not specifically but related to the topic (EndaleT., 2015),working capital management on brewery companies profitability;(Birassa F.,2016) analyzed the corporate capital structure and its impact on profitability of large tax payer manufacturing firms in Ethiopia;(Solomon,2011) studied the level of technical efficiency in the Ethiopian brewery industries using stochastic frontier production function model;(Yifru,2007)Market structure, conduct and performance of some selected Large and Medium Scale Food Manufacturing Companies ;(Menta F.,2015) factors affecting profitability in Airline industry; (Nuru,2011) the effect of working capital policies management on firms' profitability evidence from manufacturing private limited companies ;and (Mifta,2010) impact of working capital management on profitability of manufacturing share companies. From financial sectors (Demis, 2016; Reshid, 2015; Melesse, 2014; Abebaw, 2014; Birhanu2012 to list some. But the researcher wants to focus only on determinants of profitability on bottled natural mineral waters manufacturing companies. The main reason for selection of such industry is that there is much paucity in literature investigating the determinants on profitability regarding specific industries to show their performance and to add contribution for filling this gap and to check whether it had impact for the firm specific and macro-economic variables which were reviewed from empirical literature. Therefore this research paper makes an endeavor to determine the profitability of listed bottled natural mineral water manufacturing companies Addis Ababa Ethiopia with a seven years accounting period from 2013 to 2017.

Conceptual Frame work

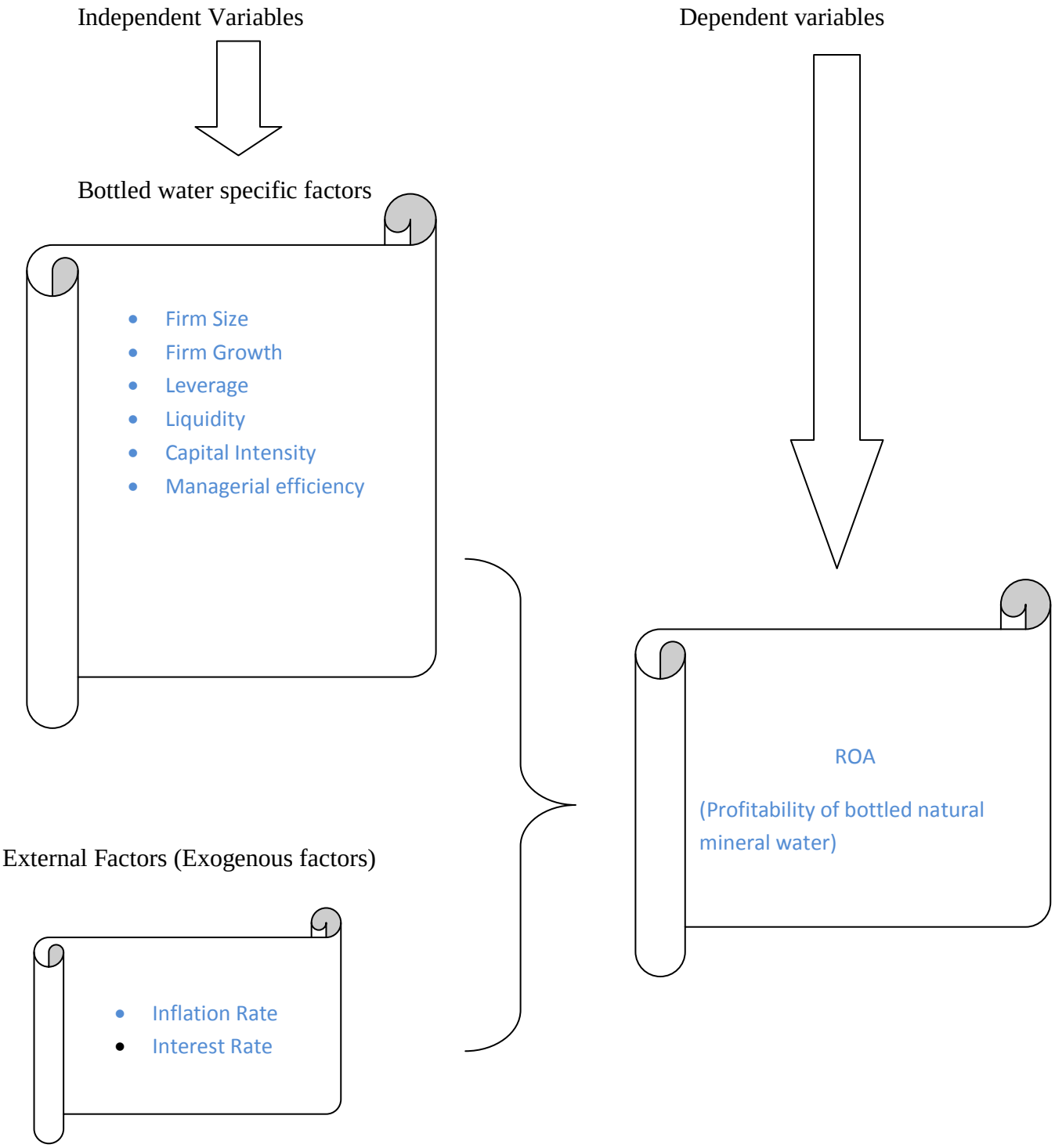
A conceptual framework represents the researcher's synthesis of literature on how to explain a phenomenon. It maps out the actions required in the course of the study given his previous knowledge of other researchers' point of view and his observations on the subject of research.

In other words, the conceptual framework is the researcher understands of how the particular variables in his study connect with each other. Thus, it identifies the variables required in the research investigation. It is the researcher's "map" in pursuing the investigation. As McGaghie*et al*. (2001) put it: The conceptual framework "sets the stage" for the presentation of the particular research question that drives the investigation being reported based on the problem statement. The problem statement of a thesis presents the context and the issues that caused the researcher to conduct the study.

Conceptual Framework

The conceptual framework lies within a much broader framework called theoretical framework. The latter draws support from time-tested theories that embody the findings of many researchers on why and how a particular phenomenon occurs.

Figure 1.1 Conceptual Frame Work: Bottled Natural Water profitability and its determinants.



Source: self-developed based on literature survey.

Chapter Three

Research Design and Methodology

Research methodology is the specific procedures or techniques used to identify, select, process, and analyze information about a topic. In a research paper, the methodology section allows the reader to critically evaluate a study's overall validity and reliability.

3.1 Research approach

Some studies on research approach demonstrated there are four main research approaches: quantitative, qualitative, Pragmatic approach to research (mixed methods) and participatory to research methods are defined below:

Quantitative research

Quantitative research is generally associated with the positivist/postpositivist paradigm. It usually involves collecting and converting data into numerical form so that statistical calculations can be made and conclusions drawn. The process researchers will have one or more hypotheses. These are the questions that they want to address which include predictions about possible relationships between the things they want to investigate (variables). In order to find answers to these questions, the researchers will also have various instruments and materials (e.g. paper or computer tests, observation check lists etc.) and a clearly defined plan of action.

3.2. Research Approach Adopted

Building on previous studies, the objective of this paper is to examine the impact of size of companies, leverage, and liquidity, growth in asset, capital intensity, managerial efficiency and inflation on bottled natural mineral waters companies' profitability. To achieve the research objective and to examine the relationship of the stated variables the researcher applied ordinary least square method which combines the attributes of cross sectional (inter-firm) and time series data (inter-period). The advantage of panel data analysis is that more reliable estimates of the parameters in the model can be obtained (Gujarati, 2004). Panel data comprise

data sets consisting of multiple observations for each sampling unit.

The data for this study is gathered from secondary source annual financial statement and reports of subjected companies basically balance sheet and income statements. A model assembled with the aim of analyzing the continuation of relationships between the dependent and the independent variable, and in addition probable relationships between and amongst the variables. The variables had examined through descriptive statistics, and the different relationships amongst the variables analyzed through the correlation matrix. The Ordinary Least Squares (OLS) regression analysis technique had been used with the aid of E-Views 9.The study has undertaken through descriptive statistics for more than ninety of the large tax payers of bottled natural mineral waters manufacturing companies, among more than ninety manufacturing companies nineteen of which is operating in Ethiopia for more than five years (2013-2017 G.C.)

3.3 Source of data and collection procedures

The researcher used secondary sources of data for this research. To have higher quality data of five consecutive years i.e. from 2013-2017 of respective companies annual financial report, to examine bottled natural mineral waters manufacturing companies–specific variables. The data had been collected from MIS department of Ethiopian Revenue and Customs Authority large tax payers office ERCA (LTO) located at Beklo bet &Mexico square Addis Ababa and for the analysis of external-specific variables the researcher collected the appropriate data from Ministry of Finance and Economic Cooperation (MoFEC), Ministry of Trade (MOT) and Central Statistical Agency (CSA) through structured document review.

3.4. Population of the study

The target populations of this study include natural mineral waters manufacturing companies operating in Addis Ababa considered under large tax payer category. All bottled natural mineral waters manufacturing companies are appropriate for the study since they are operating under the strict government regulations, making their financial and accounting disclosures largely reliable. Currently, there are ninety five (95) bottled natural mineral waters manufacturing companies operating in Addis Ababa under the large tax payer's office.

3.1.4. Sample selection

This study used sample of 35 bottled natural mineral waters from the total population of 95 bottled natural mineral waters manufacturing companies located in Addis Ababa area categorized under large tax payers' office. To be included in the research analysis, the firms had to have available balance sheets and income statements for at least five consecutive years (2013 to 2017), to allow the researcher obtain sufficient data for calculating the representative from each firm. According to CSA there are only 35 of them are qualified and registered for large tax payer`s office.

Therefore, out of the 35 companies with simple random sampling technique the researcher selected 17 Bottled natural mineral water manufacturing companies as sample size. The sample would be equal to the population. Since the data obtained from ERCA's MIS department is a softcopy with coded companies' information. Therefore, the researcher had a challenge to classify the data under their brand. Taken this into consideration the researcher believed that given the nature of the data it became manageable to have this sample size as an unbiased representative of the population. For 5 years consecutive data from 2013 to 2017, and with 17 companies, the researcher obtained 85 observations.

Number of observation = Number of Year X sample selection

= 17 X 5

=85 Observations

To select sample firms, the researcher employed simple random sampling techniques in order to give equal chance for each bottled natural mineral waters manufacturing company and the observations of the sample can be used for inferential purpose as stated by (C.R. Kothari, 2004). Random sampling from a finite population refers to that method of sample selection which gives each possible sample combination an equal probability of being picked up and each item in the entire population to have an equal chance of being included in the sample. This applies to sampling without replacement i.e., once an item is selected for the sample, it cannot appear in the sample again. (Kothari, 2004)

3.6. Choice of Dependent Variable and its measurement

In line with earlier studies that investigated the determinants of firm's profitability, this study relies on one commonly used measure of performance, which is return on total assets (ROA) and it is calculated as net profit to total assets. This is probably the most important single ratio in comparing the efficiency and performance of firms whether it is manufacturing, service and financial sectors as it indicates the returns generated from the assets those firms owns. These measures could be classified as profit performance measures and investment performance measures. However, most researchers stated that the key indicator of a firm's profitability is ROA defined as the after tax profits divided by total assets. (Alghusin, 2015;Sivathaasan, et al. 2013; Hirsch,et al.,2012;&Banoo, et al., 2012) are among others who applied NIAT as a ratio of ROA formula.

3.7. Choice of independent Variables and their Measurement

The choice of independent variables is based on their theoretical relationship with the dependent variable. Generally speaking, the chosen explanatory variables are expected to partly explain the variation of the dependent variable. In this paper, firm specific variables affecting the performance of bottled natural mineral waters companies were accounted. These independent variables and their measurement are as follows:-

1) Size of company (SIZE): Firm size is one of the most acknowledged determinants of the financial performance (Beard and Dess, 1981). In this study, total asset is used as a measure for company size.

Firm Size = log of total assets

2) Leverage (LEV): It is a financial ratio that indicates the percentage of a firm's assets that are financed with debt. The Leverage (Debt) Ratio is measured as:

Leverage Ratio= Total Liabilities/Total Asset.

3) Liquidity (LQD): Liquidity Ratio measures the firm's ability to use its current assets to retire its liabilities.

Liquidity Ratio = Current Assets / Current Liabilities.

4) Managerial Efficiency: The ratio of asset turnover (efficiency ratio) was used to measure managerial efficiency and the higher the ratio the higher the managerial efficiency. The total asset turnover ratio is a general efficiency ratio that measures how efficiently a company uses all of its assets. This gives investors and creditors an idea of how a company is managed and uses its assets to produce products and sales.

Managerial efficiency= Total revenue /Total asset

5) Capital Intensity: Describes the amount of plant, property, equipment, inventory and other tangible or physical assets required to generate a unit of sales revenue. We quantify this characteristic by using the ratio of a company's total assets divided by revenue.

Capital intensity =Total Asset/ Total Revenue

6) Growth of Assets: In this study growth of the bottled natural mineral water manufacturing companies' asset is measured by the percentage change in total assets of natural mineral water producing companies.

Growth= (Asset t-Asset t-1) X 100 Asset t-1

7) Inflation rates (INFR): The annual inflation rate was used.

8) Interest rates (INTR): the annual interest rate was used.

3.8. Model specification

This research concerned only on profitability of bottled natural mineral waters companies located in Addis Ababa Ethiopia as a firm performance that include financial statement from 2013 to 2017 for analysis and the internal and external factors that determine profitability. In line with earlier studies that examined the determinants of bottled mineral water companies' profitability, accounting ratios are used as measurement of individual variables. In order to select the determinants as independent variables in the model, previous studies are reviewed and this reviewed study suggests that the following seven factors exert strong impact on bottled natural mineral waters companies' profitability as internal and external determinants as a result

they are adopted in the model. The researcher used major dependent variable of determinants of profitability measured by return on asset modified by (Etale and Bingilar 2016; Alalade,O. 2015;Tariq and Hasan, 2013; Ahmad and Alghusin, 2010).In this model, all independent variables enter the regression equation at once to examine the relationship between the whole set of independent and dependent variable. The aim of this analysis is to determine which independent variables are highly significant to determine the company's profitability.

$$ROA_{bmw,t}=\alpha+\beta 1Sizebmw,t+\beta 2Levbmw,t+\beta 3LQbmw,t+\beta 4GRbmw,t+\beta 5MEFbmw,t+\beta 6CAPINTbmw,t+\beta 7INFRbmw,t+\beta 8INTRbmw,t\ Єbmw,t$$

Where:

•ROAbmwt: Dependent variable return on Asset of company bmw at time t

•Sizebmwt: Size of company bmw at time t

•Levbmwt : Leverage of company bmw at time t

•LQbmw: Liquidity of company bmw at time t

•GRbmwt: Asset Growth of company bmw at time t

•MEFbmw: Managerial efficiency of company bmw at time t

•CAPINTbmw: Capital intensity of company bmw at time t

•INFRbmwt: Inflation rate of company bmw at time t

• INTRbmwt: Interest rate of company bmw at time t

•β= 1, 2, 3...8 are parameters to be estimate;

•Є= is the error term

•bmw = Bottled Mineral Waters company, β= 1. . . 8; and t = the index of time periods and t = 1...5

The above regression model form was employed in the studies carried out by (Etale, and Bingilar, 2016; Ahmad and Alghusin, 2010).

Table 3.1 Description of the variables and their expected relationship

Variable		Measurement	Sign
Dependent	Profitability(ROA)	Net profit after tax/total assets	N/A
Independent	Firm Size	Logarithm of total assets	+/-
	Leverage	Total debt/ total Asset	-
	Liquidity	Current Assets / Current Liabilities	+/-
	Managerial Efficiency	Total revenue / Total asset	+
	Capital Intensity	Total Asset / sales	+
	Growth of Asset	Percentage change in Total Asset	+
	Inflation rate	Annual inflation	-
	Interest rate	Annual interest rate	-

Source: self-developed based on the empirical literature.

3.9. Data analysis and presentation

Multiple linear regression data analysis method has employed to analyse the relationship between the profitability of natural mineral water producing companies and the independent variable size of companies, leverage, liquidity, asset growth, managerial efficiency, capital intensity and inflation. Descriptive statistics were used to quantitatively describe the important features of the variables using mean, maximum minimum and standard deviations. Diagnostic tests were performed to ensure whether the assumptions of the CLRM are violated or not in the model. Correlation analysis was applied to identify the relationship between the dependent and independent variables. It shows only the degree of association between variables and does not permit the researcher to make causal inferences regarding the relationship between variables. According to (Kothari, 2004), regression analysis is concerned with the study of how one or more variables affect changes in another variable. Eviews- 9 econometric software was used for analysis of secondary data regression and the results were presented through table's and graphs.

Chapter Four

Result and Discussions

4.1. Introduction

The main objective of this study is to identify factors that affecting bottled mineral waters profitability internally and externally. The following presents below the results of the E-view analysis as follows, section 4.2 and 4.2 presents descriptive statistics and the test for the classical linear regression model assumption (CLRM) respectively followed by the correlation analysis among the dependent and independent variables in section4.4 and in 4.5 the final results of the panel data regression analysis are presented in table 4.2.

The dependent variable used in this study in order to measure the sample mineral water producing companies profitability is return on asset (ROA) whereas the independent variables are the size of the company, Leverage, Liquidity, Growth in asset, Managerial efficiency, capital intensity, inflation and lending interest rate. The researcher conducted descriptive statistics using Eviews 9. Econometrics software in order to describe the effects detailed to understand about the study of variables that are being analysed. Descriptive statistics is the foundation of stone for any type of analysis which enables the researcher to describe the relevant aspects to all the study variables that entail detailed information about each relevant variable. Descriptive statistics is derived from statistical analysis before another test performed using multiple regression analysis (DjokoSuhardjanto, et al, 2009). Descriptive studies produced the mean, minimum, maximum and minimum deviation, skewness, Kurtosis for each variable. Here below, the descriptive statistics for all variables are presented below in table 4.1

Table 4.1 Descriptive statistics of study variables

	ROA	SIZE	MEF	LQD	LEV	INTR	INFR	GROWTH	CAPINT
Mean	0.101227	8.326541	0.271190	2.312044	0.455898	8.160000	8.560000	0.096096	0.967917
Median	0.067506	8.421920	0.266987	2.056780	0.409988	8.200000	8.100000	0.077568	0.891268
Maximum	0.339377	10.75523	0.661826	5.002121	0.962356	8.800000	10.10000	0.634240	1.933567
Minimum	-0.073280	6.212298	0.017389	0.038665	0.132818	7.500000	7.300000	-0.271240	0.147964
Std. Dev.	0.091996	0.934841	0.166595	1.257650	0.199488	0.470106	1.216474	0.137694	0.356789
Skewness	0.537622	0.158375	0.517613	0.354703	0.679909	-0.063959	0.271393	1.336921	0.625521
Kurtosis	2.333556	2.736636	2.305543	2.320273	2.863848	1.625548	1.236741	7.642417	3.182609
Observations	85	85	85	85	85	85	85	85	85

Source: Eviews summary descriptive statistics result

The above table shows that the descriptive statistics of each variable, computed based on 85 observations recorded. It can observed that the average value of 0.101227 ROA deviates from the average value with about 0.0911996, which implies the presence of well variation among the values of profitability across the manufacturing of bottled natural water producing companies and more over the total assets ratio fluctuates between 0.339377 and minus 0.073276, implies most profitable bottled natural mineral waters manufacturing companies earned 0.34 of net income from a single amount of birr of asset investments, and the maximum loss incurred by the companies had a loss of 0.073 cents on each birr of assets investments respectively.

There is significant variation across the sample of manufacturing of bottled natural mineral waters companies, the mean of the size is 8.33 and the standard deviation is 0.94. Therefore the varieties of size among mineral waters producing companies will have significant effect on profitability of bottled mineral waters companies. The maximum and the minimum value of size were 10.76 and 6.21 respectively. The average value of managerial efficiency has become 0.27 with a standard deviation of 0.17, this implies that there is a moderate variation among the manufacturing of bottled mineral waters in Ethiopia .The mean value of 0.27 in this study showed that the manufacturing of mineral waters are efficient being of operating expenses per unit of operating income is high, means that 27% of gross profit has related to the operating income and implies on average the company`s profitability is a contribution of managerial efficiency. 0.66 and 0.02 were the maximum and the minimum managerial efficiency respectively. The mean value of the liquidity ratio is 2.31 and the value of standard deviation is 1.26 with 5.00 and 0.04 maximum and minimum values respectively. This outcome showed that some mineral waters manufacturing are moderate liquid and the others had low variation and had no reserve to pay current obligation.

The mean value and standard deviation of leverage is 0.46 and 0.96 respectively, there is some difference among leverage level and debt to asset ratio across the sample of bottled water manufacturing companies. From the result obtained water producing companies are moderately levered. The mean value of capital intensity is 0.97 with the standard deviation of 0.37 which shows moderate variation which showed the companies invested medium amount of money to get one birr worth of output. According to Shaheen and Malik (2012) the more capital applied to produce the same unit of the capital intense the firm is said to be. The maximum value

which is 1.93 and minimum value 0.15 shows a medium bottled mineral water manufacturing companies had classified in to those industries considered to be moderate capital intensive.
The average inflation that occurred over the year is 8.56 with the standard deviation of 1.26.this implies there had significant variation in inflation with in the period this studies covered. The maximum and the minimum inflation over the year were 10.1 and 7.3 percent respectively. The same is true for interest rate as inflation rate occurred for the year that the average interest rate over the year is 8.16 with standard deviation of 0.47 and had significant variation in interest rate. The maximum and the minimum interest rate over the year were 8.8 and 7.5 respectively.

4.3. Test result for the classical linear regression model assumptions

The following presents the fundamental regression test assumptions which are carried out to ensure that the data fits the basic assumption of classic linear regression (CLRM). The outcome for the model misspecification tests are presented below:

4.3.1 Test of expected value of error term zero.

The first assumption of CLRM required that the average value of the error is zero, Brooks (2008), if the constant term is included in the regression equation, the assumption will not be violated and if the regression did not include an intercept, and the average value of the errors was non-zero and R^2 is simply the ratio of ESS to TSS can be negative implies that the sample average, Y explains more of the variation in y than the explanatory variables. A regression with no intercept parameter could lead to potentially severe biases in the slope coefficient estimates. The effect is that the estimated line in this case is forced through the origin, so that the estimate of the slope coefficient (β) is biased. Moreover, R^2 and R^2 are mostly undefined but based on the outcomes of this study the constant term is included in the regression, besides the result of the R^2 has a meaning. Hence the case of the first assumption of CLRM is not violated.

4.3.2. Test of Hetroscedasticity

Heteroskedasticity Test: White

F-statistic	0.689454	Prob. F(8,76)	0.6996
Obs*R-squared	5.751400	Prob. Chi-Square(8)	0.6751
Scaled explained SS	5.071844	Prob. Chi-Square(8)	0.7499

Source: Eview output based on financial statement of sample bottled mineral waters producing companies.

In test of hetroscedasticity formulate the following hypothesis, the null hypothesis is there is no hetroscedasticity and the alternative hypothesis is there is hetroscedasticity. As Brooks (2014) it has been assumed that the variance of the error term is constant, σ^2 this is known as the assumptions of homoscedasticity. If the errors do not have a constant variance, they are hetroskedastisitc. In this research which is shown above in table 4.2 both the f-statistic and chi-square version of the test statistic gave the same conclusion that there is no variance for the presence of hetroskedasticity. Since the p-values were in excess of 0.05. The third version of the test statistic, scaled explained SS, which was the name suggests is based on a normalized version of the explained sum of square from the auxiliary regression, also gave the same conclusion that there is no evidence for the presence of hetroskedasticity a problem being the p-value was excess of 0.05

4.3.3. Test of autocorrelation

As mentioned Brooks (2008) assumption 3 says that is made of the CLRM`s disturbance term is the covariance between the error term over time is zero this means that the errors are uncorrelated with one another. If the errors are not correlated with one another, it would be stated that they are 'auto-correlated'. If the errors are correlated with one another, it would be stated that they are auto correlated. To test for the existence of autocorrelation or not, the popular DW test was employed. The rejection or non- rejection rule would be given by selecting the appropriate region from the following figure:-

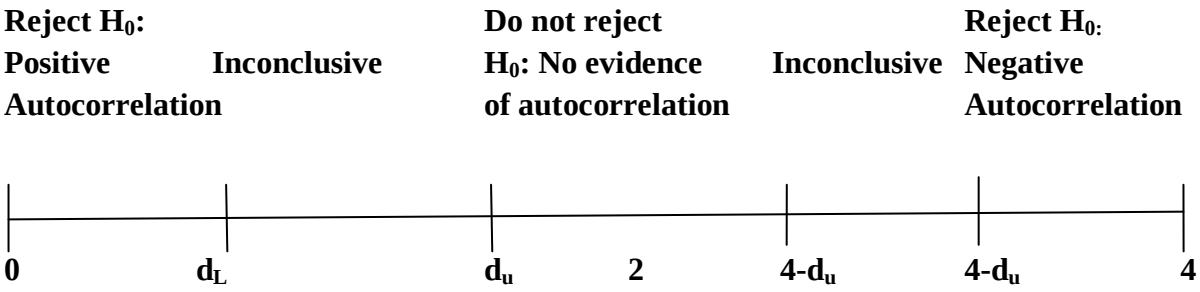


Figure 4.1 Rejection / non-rejection rule

The DW test has two critical values i.e. un upper critical value (d_u) and lower critical value ($d_{L)}$ and also have intermediate region where the null hypothesis of no autocorrelation can neither be rejected nor not rejected, so the null hypothesis is rejected and the existence of positive autocorrelation presumed if DW is less than the lower critical value: the null hypothesis is rejected and the existence of negative autocorrelation presumed if DW is greater than 4 minus the lower critical value; the null hypothesis is not rejected and no significant residual autocorrelation is presumed if DW is between the upper and 4 minus the upper limits (Guajariti 2004).

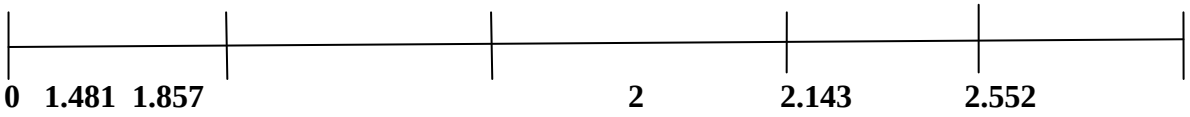
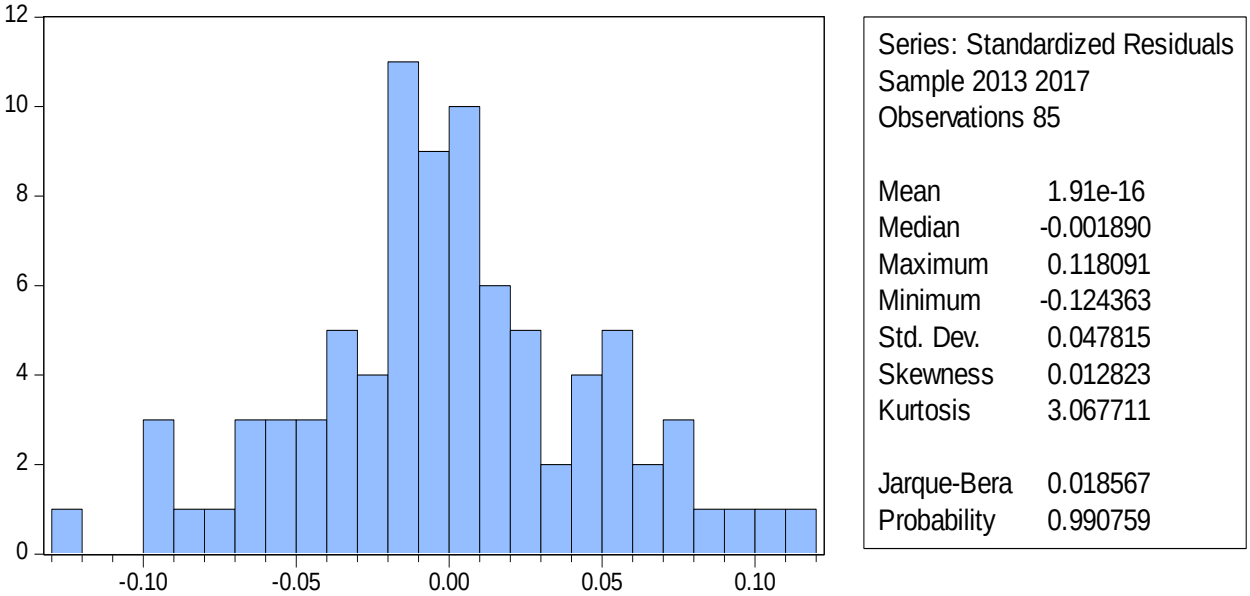


Figure 4.2 DW result

The value of DW result from this study regression was 1.481 The empirical analyses of the determinants of profitability of bottled mineral waters in A.A, 85 (17*5) observations were used in this model, in addition to this there were also 8 explanatory variables and an intercept term in the model. From DW test statistic table, the relevant values for the test are d_L=1.45, d_u=1.85, i.e. for 85 observation and 8 explanatory variables excluding the constant term. Therefore, 4-d_u=4-1.86=2.14 and 4-d_L=4-1.45=2.55. The DW test statistic result 1.48 is between the above mentioned results.

4.3.4. Test of Normality

Bera-Jarque is the most commonly used for normality test which is called BJ test. BJ uses the property of a normality distributed random variables that the entire distribution is characterized by the first two moments the mean and the variance. The standardized third and fourth moments of a distribution are known as the skewness and kurtosis respectively. Skewness measures the extent to which a distribution is not symmetric about its mean value and kurtosis measures how thick the tails of the distribution are. A normal distribution is not skewed and is defined to have a coefficient of kurtosis of 3. If the residual are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant. This means that the p-values given at the bottom of the normality test screen should be greater than 0.05 to not reject the null hypothesis of the normality at the 5% level. (Brooks, 2012).



Source: Eviews output based on financial statement of sample bottled mineral waters producing companies.

From the above normality test for this study in figure 4.3 the null hypothesis state that data are normally distributed i.e. there is no problem of normality and the alternative hypothesis data are not normally distributed i.e. there is a problem of normality, therefore ,the coefficient of kurtosis is almost 3, and the bera-jarque statistics had a p-value of 0.018567 and showed the

residual of this study are normally distributed and the data were consistent with a normal distribution assumption and accept the null hypothesis that the error term is normal.

Test of Multicollinearity

According to Brook (2012). The most mentioned author in this chapter; an implicit assumption that is made when using the OLS estimation method is that the explanatory variables are not correlated with one another. If there is no relationship between the independent variables, they would be said to be orthogonal to one another. If the independent variables were orthogonal to one another, adding or removing a variable from a regression equation would not cause the values of the coefficients on the other variables to change. In any practical context, the correlation between independent variables will be non-zero, although this will generally be relatively benign in the sense that a small degree of association between explanatory variables will almost always occur but will not cause too much loss of precision. However, a problem occurs when the explanatory variables are very highly correlated with each other, and this problem is known as multicollinearity. The multicollinearity test helps to identify the correlation between explanatory variables and to avoid double effect of independent variable from the model.As noted by Kennedy (2008) multicollinearity problem exists when the correlationcoefficient among the variables are greater than 0.70, the correlation matrix between dependent with independent variables and the correlation matrix between independent variables are presented below as follows.

4.3.5.1 Correlation matrix between return on asset and independent variables

The ROA reflects the ability of manufacturing of bottled mineral waters managements to generate profits from the company assets and this profitability measure is correlated with other independent variables either positively or negatively. In table 4.3 below, the correlation analysis was undertaken between profitability measure; ROA and independent variables; size, leverage, liquidity, firm growth, managerial efficiency, capital intensity, interest rate and inflation. As it can be seen from the table below, there was a negative correlation between ROA and size, firm growth, capital intensity, leverage and liquidity. While, there is a positive correlation between ROA and managerial efficiency, interest rate and inflation rate. As per the table below, the correlation coefficient between ROA and capital intensity was -0.039 which is

the smallest correlation coefficient as compared to other variables, this mean that capital intensity has small association with profitability which is similar to other previous studies. But, managerial efficiency had ranked the highest positive correlation coefficient compared to other

variables. This result shows that the managerial efficiency is high in manufacturing of bottled mineral waters producing companies it shows positive correlation with the profitability measured by return on asset. This means that these variables had a major role on the profitability of bottled mineral waters companies.

Table 4.3 Correlation matrix between ROA and independent variables

	ROA	SIZE	MEF	LQD	LEV	INTR	INFR	GROWTH	CAPINT
ROA	1.000000								
SIZE	-0.101972	1.000000							
MEF	0.534620	-0.044804	1.000000						
LQD	0.291101	-0.011621	0.024363	1.000000					
LEV	-0.111825	-0.088260	-0.147353	-0.023195	1.000000				
INTR	-0.325107	0.024303	0.021120	0.085138	0.076886	1.000000			
INFR	-0.125693	-0.095712	-0.007614	0.003228	0.034202	0.433289	1.000000		
GROWTH	-0.204289	0.010519	-0.048484	0.055494	0.112762	-0.085760	-0.181636	1.000000	
CAPINT	-0.386499	-0.098803	0.292902	-0.076035	0.120439	0.321719	0.029531	0.148112	1.000000

Source: Eviews output based on financial statement of bottled water producing companies.

From the above table:

The null hypothesis is there is no multicollinearity problem and the alternative hypothesis is there is a multicollinearity problem.

According to Brook (2014) multicollinearity problem exists when the correlation coefficient among the variables are greater than 0.8, therefore from the above tables there is no autocorrelation between independent variables.

4.3.5.2 Correlation matrix of independent variables

The correlation between independent variables; size, leverage, liquidity, firm growth, managerial efficiency, capital intensity, interest rate and inflation included in this study are presented and analysed. According to table 4.4 below, the growth of manufacturing of bottled mineral waters with interest rate and liquidity with inflation rate and size are highly correlated as compared to other independent variables.

Table 4.4 correlation matrix between independent variables.

	SIZE	MEF	LQD	LEV	INTR	INFR	GROWTH	CAPINT
SIZE	**1.000000**							
MEF	**-0.044804**	**1.000000**						
LQD	**-0.011621**	**0.024363**	**1.000000**					
LEV	**-0.088260**	**-0.147353**	**-0.023195**	**1.000000**				
INTR	**0.024303**	**0.021120**	**0.085138**	**0.076886**	**1.000000**			
INFR	**-0.095712**	**-0.007614**	**0.003228**	**0.034202**	**0.433289**	**1.000000**		
GROWTH	**0.010519**	**-0.048484**	**0.055494**	**0.112762**	**-0.085760**	**-0.181636**	**1.000000**	
CAPINT	**-0.098803**	**0.292902**	**-0.076035**	**0.120439**	**0.321719**	**0.029531**	**0.148112**	**1.000000**

Source: Eviews output based on financial statement of sample manufacturing bottled mineral waters companies

From the above table we can see that the size of bottled mineral water producing company is positively related with all independent variables except liquidity, leverage and capital intensity. Managerial efficiency is positively related with interest rate, inflation rate and capital intensity. Liquidity also has positively related with capital intensity and inflation rate. Leverage has positively related with all independent variable except size of the firm. Growth has positively correlation coefficient with capital intensity, size and leverage but negatively correlation coefficient with interest rate, inflation rate, managerial efficiency and liquidity. Capital intensity has positive correlation coefficient with all independent variables except only with. Inflation rate has also positively correlated coefficient with all independent variable except that of size and managerial efficiency. Finally interest rate has positively relation coefficient with all independent variables.

4.4. Choosing random versus fixed effect model

As noted by Brook (2008) there are broadly two classes of panel estimator approaches that can be employed in financial research: fixed effects models and random effects models. The simplest types of fixed effects models allow the intercept in the regression model to differ cross-sectional but not over time, while all of the slope estimates are fixed both cross-sectionally and over time. An alternative to the fixed effects model, the random effects model,

which is sometimes also known as the error components model. As with fixed effects, the random effects approach proposes different intercept terms for each entity and again these intercepts are constant over time, with the relationships between the explanatory and explained variables assumed to be the same both cross-sectionally and temporally. As noted by Gujarati (2004) if T (the number of time series data) is large and N (the number of cross-sectional units) is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model and random effect model. To achieve the objective of the study whether the fixed effect or random effect approach is appropriate the researcher has to run Hausman specification test at five percent level (Hausman, 1978), and the model is allowed the researcher to run the Hausman test in this study, therefore random effects test was conducted for to determine whether the random effect is appropriate for the models.

4.5 Regression analysis result

Table 4.5 summary of regression output

Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Date: 02/01/19 Time: 23:01
Sample: 2013 2017
Periods included: 5
Cross-sections included: 17
Total panel (balanced) observations: 85
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIZE	-0.012102	0.006103	-1.982906	0.0510
MEF	0.369318	0.043488	8.492465	0.0000***
LQD	0.015408	0.005577	2.762721	0.0072***
LEV	0.017628	0.033875	0.520402	0.6043
INTR	-0.032598	0.012424	-2.623723	0.0105**
INFR	-0.005644	0.004451	-1.268087	0.2086
GROWTH	-0.086504	0.037369	-2.314868	0.0233**
CAPINT	-0.135694	0.018602	-7.294445	0.0000***
C	0.512138	0.100577	5.091996	0.0000

Effects Specification		
	S.D.	Rho
Cross-section random	0.024920	0.2502
Idiosyncratic random	0.043142	0.7498

Weighted Statistics			
R-squared	0.701088	Mean dependent var	0.061970
Adjusted R-squared	0.669624	S.D. dependent var	0.076075
S.E. of regression	0.043727	Sum squared resid	0.145315
F-statistic	22.28195	Durbin-Watson stat	1.481168
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.729862	Mean dependent var	0.101227
Sum squared resid	0.192047	Durbin-Watson stat	1.120745

*****, **, indicates significant at 1% and 5% significant level respectively**

Sourec: Eviews 9 outputs based on financial statements of bottled natural mineral waters companies

The above table section presents the empirical findings from the econometric output and results on determinants of producing bottled mineral waters companies' profitability. Table 4.5 above reports regression results between the dependent variable (ROA) and independent variables firm size, leverage, liquidity, firm growth managerial efficiency, capital intensity, interest and inflation rate. Under the following regression outputs the beta coefficient may be negative or positive; beta indicates that each variable's level of influence on the dependent variable. P-value indicates at what percentage or precession level of each variable is significant. The R-squared value measures how well the regression model explains the actual variations in the dependent variable (Brooks, 2008). R-squared statistics and the adjusted- R squared statistics of the model was 70% and 67% respectively. This indicates the independent variables in this study jointly explain about 67 percent of the variation in the profitability of bottled mineral water companies' measure, ROA. The remaining 33 percent of the variations in the profitability of bottled mineral waters companies explained by other variables which are not included in the model in this research. Thus these variables collectively, are good explanatory variables to identify the determinant of bottled mineral water manufacturing companies' profitability. The regression F-statistic (22.28) and the p-value of zero attached to the test statistic revealed that the null hypothesis that all of the coefficients are jointly zero should be rejected. Thus, it implies that the independent variables in the model were able to explain variations in the dependent variables. The operational panel least square regression analysis above was used to estimate by the following model:-

$$ROA_{bmw,t}=\alpha+\beta 1Sizebmw,t+\beta 2Levbmw,t+\beta 3LQbmw,t+\beta 4GRbmw,t+\beta 5MEFbmw,t+\beta 6CAPINTbmw,t+\beta 7INFRbmw,t+\beta 8INTRbmw,t\ Ebmw,t$$

Specifically, when the above panel least squares model is converted into specified variables with their coefficient it becomes:

$$ROAbmw_t = 0.512145 - 0.012102Size + 0.017628Lev - 0.015408LQ - 0.086804GR$$
$$(0.10577) \quad (0.0061) \quad (0.0339) \quad (0.0056) \quad (0.0374)$$

$$+0.369318MEF - 0.135694CAPINT - 0.005644\ INFR - 0.032598INTR + \epsilon$$
$$(0.0435) \quad (0.0101) \quad (0.0045) \quad (0.0124)$$

Note: values in parentheses are standard errors

Table 4.5 above showed that independent variables size, growth, managerial efficiency, leverage, Capital intensity, inflation and interest rate except leverage and size had significant impact on profitability. Among the significant variables MEF, LQD, CAPINT were significant at 1% significance level since the p-value for those variables were 0.0000, 0.0072, and 0.0000 respectively. Whereas variables like INTR and GROWTH were significant at 5%significance level. Regarding the coefficient of independent variables; size, interest, inflation, growth and capital intensity were negative against profitability as far as the coefficients for those variables were -0.012102, -0.032598, -0.105644, -0.086504, and -0.135694 respectively. On the other hand, variables like managerial efficiency, liquidity and leverage had a positive relationship with profitability to the extent that their respective coefficients were 0.369318, 0.015408 and 0.017628 respectively.

Size

The panel OLS regression result of this study revealed that there exist insignificant and negative relationship between size and profitability of bottled mineral water manufacturing companies with a regression coefficient of -0.12102, t-statistics of -1.982906 and p-value of 0.0510.

Leverage

With the regression results of the study showed that there is a positive relationship and insignificant relationship between leverage ratios of bottled mineral water companies and hence this result had no consistent with the formulated hypothesis of the study, rather for this study the formulated hypothesis is rejected on profitability of bottled mineral water producing companies.

Liquidity

As shown above in table 4.5, the regression coefficient of liquidity is 0.015408 with a t-statistics of 2.762721 and significance value of 0.0072.The results of this regression regarding liquidity implied that there is significantly positive relationship between liquidity ratio of bottled mineral water companies and its profitability is at 5% significant level. Hence this result had consistent with the formulated hypothesis of the study ,the researcher were initially begin with the hypothesis that liquidity could have positive significant impact on profitability of bottled mineral water producing companies. The result is similar with the finding of Samuel

and Abdulateef (2016**),** Endale (2015),Nwakaeg (2014) their study revealed that liquidity has negative statistically insignificant relationship with ROA on the other hand the study done by,(Al-jafari and Al- Samman, 2015)(Menta F.M. 2015); (On wumereandIbe 2012) they founded that liquidity has Positive and negative statistically significant relationship with profitability.

Firm growth

The results of the random effect regression analysis shows that there is a negative and statistically significant relationship between firm growth and profitability of bottled mineral water producing companies with a regression coefficient of -0.086504, t-statistics of -2.314868 and p-value of 0.0233. For this reason the results are consistent with the hypothesis of the study. The researcher hypothesized that bottled mineral water producing companies having more and more assets over the years have also better chance of being profitable for the reason that they expected to have internal capacity though it depends on their ability to exploit external opportunities, and the result of this regression regarding growth implied that there is significantly negative relationship between firm growth of bottled mineral water companies and its profitability is at 5% significant level. Hence this result had consistent with the formulated hypothesis of the study, the researcher were initially begin with the hypothesis that Firm growth could have positive significant impact on profitability of bottled mineral water producing companies.

Managerial efficiency

Managerial efficiency is the proportion of total organization resources that contribute to productivity during the manufacturing process. The higher this proportion, the more efficient the manager. The more resources wasted or used during the production process, the more efficient the manager. Profitability and management efficiency are usually taken to be positively associated such that poor current profitability may threaten current management efficiency and poor management efficiency may threaten profitability. As it can be seen from table 4.5, managerial efficiency as measured by the ratio of total revenue to total asset is statistically significant at 1percent significant level with ROA. Which means management of

bottled mineral water companies are efficiently utilize their resources and had great contribution to improve profitability. From the table regression result coefficient is 0.369318, t-statistics 8.492465 and p-value of 0.0000. For this reason, the results are reliable with the hypothesis of the study and had similar result with Jamali and Asadi (2012).Therefore the formulated hypothesis was not rejected.

Capital intensity

The coefficient of capital intensity which is measured by total asset to total revenue was negative -0.135694 and statistically significant at 5% significance level (p-value=0.000). According to (Leeand Xiao, 2011) capital-intensive business is the one that requires large amounts of financial resources to produce products or services. Often as a ratio of total assets or fixed assets to sales or labor inputs, defines a firm's efficiency in utilizing its assets to produce goods or services. As he noted, with empirical support, the financial economics literature suggested both benefits and drawbacks from capital intensity in relation to firm risk and performance. high level of capital intensity may increase a firm's risk from high volatility in profitability, likely induced by the significant level of fixed costs that do not vary according to variations in sales (Brealey and60Myers, 1984; Shapiro and Titman, 1986) cited by (Lee and Xiao, 2011). On the other hand, capital intensity may help a firm to be financially efficient from its already committed and expensed costs for fixed assets that contribute to the firm's production during the life of those assets (Lubatkin and Chatterjee, 1994) again cited by(Lee and Xiao, 2011).The above regression analysis shows negative and significant results. The researcher believed that it could be one of the above reasons for a negative result of capital intensity and the framed hypothesis is not rejected

.

Inflation

Regarding to external macroeconomic variables table 4.5 regression results shows that the general inflation rate of the country does not show significant effect on profitability of bottled mineral water producing companies. According to the result coefficient of inflation rate is -0.005644 with a t-statistics of -1.268087 including P value of 0.2086. Thus from the result it can be concluded that there exists no relationship between inflation rate with profitability with a 5 % significant level. It is not therefore consistent with the hypothesis of the study. The hypothesis of this study is rejected. Most studies indicated that inflation have insignificant

relationship with bottled water manufacturing company's profitability. To ention,Mutunga, (2014);Moaveni (2014); Tariq and Hasan (2013); Naceur (2003); Ayadi and Boujelbene (2012) concluded that the macroeconomic variables such as economic growth and inflation, do not have significant effect on profitability. It can be concluded that from this study the general level of inflation do not have significant impact on profitability of bottled mineral producing companies.

Interest Rate

Table 4.5 regression results shows that the general interest rate of the country does show significant effect on profitability of bottled mineral water producing companies. According to the result coefficient of interest rate is -0.032598 with a t-statistics of -2.623723 including 5 % significance P value of 0.0105. Thus from the result it can be concluded that there exists relationship between interest rate with profitability with a 5 % significant level. It is therefore consistent with the hypothesis of the study. The hypothesis of this study is not rejected. Most studies indicated that interest rate have insignificant relationship with bottled mineral water producing companies profitability.

4.6 Summary of main findings

In this study, the empirical analysis of investigating the determinants of the profitability of bottled mineral water producing companies was conducted using a panel data set consisting of financial data of seventeen bottled mineral water manufacturing companies over the period of 2013 to 2017.From the result of OLS regression analysis, the profitability of large category bottled water manufacturing companies which is found in Addis Ababa is highly affected by all variables included in this study except size, leverage and inflation. The findings of the study showed that firm growth, managerial efficiency, liquidity, interest rate and capital intensity have statistically significant and negative relationship with bottled mineral water profitability. On the other hand, managerial efficiency has a positive and statistically significant relationship with bottled mineral water profitability. The following sections discussed about the final conclusion remarks of the study, applicable recommendations and future research recommendation.

Table 4.5 Summary of the current study result and previous research results.

Firm specific factor	Hypothesis	Current study result	Previous study result	Hypothesis Result
Firm Size	+ve significant	-ve insignificant	+/- significant	Rejected
Leverage	-ve significant	+ve insignificant	+/- significant	Rejected
Firm Growth	+ve significant	-ve significant	+/- significant	Not -rejected
Capital Intensity	+ve significant	-ve significant	+/- significant	Not-rejected
Managerial efficiency	+ve significant	+ve significant	+/- significant	Not-rejected
Liquidity	+ve significant	+ve significant	+ve significant	Not-rejected
Inflation rate	-ve significant	-ve insignificant	-ve significant	Reject
Interest rate	-ve significant	-ve significant	+ve significant	Not-rejected

Chapter Five
Conclusions and Recommendations

The previous chapter presented the analysis of the findings, while this chapter deals with the conclusions and recommendations provided based on the findings of the study. Accordingly, this chapter is organized into two subsections. The first section presents the conclusions whereas the second section presents the recommendations.

5.1. Conclusions

This study aimed to identify the main factors that determine bottled mineral water profitability and the extent to which these determinants exert impact on bottled mineral water profitability. In doing so, previous studies have been reviewed and summarized that the profitability of bottled mineral water producing profitability is usually expressed as a function of internal and external determinants. The internal determinants refer to the factors originating from bottled water financial statements (balance sheets and income statement) and therefore could be termed bottled mineral water companies specific determinants of profitability. The external determinants are variables that are not related to companies management but reflect the factor determinants that affects the operation and performance of manufacturing companies. Empirical results from previous studies conclude that internal factors explain a large proportion of bottled mineral water profitability; nonetheless external factors do have an impact on the performance. Eight explanatory variables have been proposed for both categories, according to the nature and purpose of the study. Studies dealing with internal determinants employ variables such as size, leverage, growth in asset, liquidity, managerial efficiency and capital intensity. While for external determinants one factor mostly related have been suggested as an impact on the profitability and this variable that describe the macroeconomic factor which had general impact on this sector such as inflation and interest rate.

To comply with the objective of this research, the paper is based on quantitative research method. The quantitative data were mainly obtained from respective bottled mineral water companies' annual reports, MOFEC and MOT through documentary analysis; in order to identify and measure the determinants of bottled mineral water profitability. Panel random

effect model, multiple regression analysis is adopted to measure the determinants of bottled mineral water profitability quantitatively. For testing the research hypotheses, a sample size of seventeen bottled mineral water companies were randomly selected and the necessary financial data were collected for the time period of 2013 to2017. From the empirical findings on the impact of bottled mineral water profitability in Addis Ababa for the sample suggest the following conclusions.

As expected, the result showed a negative relationship between firm size and profitability with strong statistical significance but the coefficient of the ratio of firm size is relatively lowest. It shows that the decreased in firm size result by a percent lowering the profitability by the coefficient amount. It can be concluded that as much as large size firms have greater possibility of taking advantage of scale of economies which enable more efficient production, greater bargaining power, exploiting experience curve effect and getting price above competitive level. However some authors claim that size may have no negative impacts on profitability (Shepherd, 1972),especially if growth in size causes a diseconomies of scale , and the result also showed a negative relationship between leverage ratio and profitability with statistical significance. This shows that increasing debt for selected bottled mineral water companies would certainly hamper financial performance of that sector, moreover the result showed strong significant impact on managerial efficiency and capital intensity with profitability. The coefficient of managerial efficiency is highest and positive whereas capital intensity coefficient is negative and have significant at 1% significant effect on profitability. As it shown by the result managements of bottled water companies are efficient of their asset utilization in order to improve the profitability of those selected sampled companies. On the other hand profitability is declined by 3.5% when this listed bottled mineral water manufacturing companies increased by a level of 1% capital investment.

This situation implied that on this reference sample period this manufacturing sector had done large amount of capital (investment) for undertaking its operations.

Finally, the coefficient of explanatory variables size, interest and inflation rate growth and capital intensity are with a negative coefficient sign and the beta values of liquidity and leverage have a positive coefficient sign. However, inflation, asset size and leverage are not statistically significant with the large p-values. Therefore, size, inflation, and leverage are not considered as powerful explanatory variables to define the profitability of selected bottled mineral water producing companies.

5.2 Recommendations

Based on the findings of this study and the conclusions drawn above, the following recommendations are made:

i) The results of significant positive relationship between liquidity and return on asset lead to around a 5 % increase in firms' profitability. Having enough working capital in this sector would contribute much more of important for the industries being distribution of those products are in need of working capital. It is likely due to the induced significant level of fixed costs that do not vary according to variations in sales. Hence in order to cope up this prevalence, firms' managers should have to search for the right financing alternative, to manage the significant level of fixed cost. So that based on this study this manufacturing sector should provide working capital resource properly in order to boost the profitability of their sector.

ii) The positive and significant relationship between manufacturing bottled mineral water companies' profitability (ROA) and managerial efficiency, leads to an increase in firm's profitability. The result of the study shows whenever the company increases its managerial efficiency, profitability increases by 53 % percent.

Based on this finding, the researcher recommends the following:-

- In order to increase the liquidity, bottled mineral water companies should have to look for their competitive edge with their competitors to compete by increasing working capital and sells more products and increase their market share.
- If they are willing to expand in terms of size, they must have to take care of not losing their economies of scale advantage.
- Finally they should have to detect the availability of internal and external factors and the current market standing of the firm.

iii) The study found also that capital intensity has a negative relationship with firms' profitability. Therefore, based on the result regarding the capital intensity, the researcher recommends that: a 1 % increase in capital intensity lowering bottled mineral water profitability by 13.5%.

iv)The study also found positive relationship between management efficiency and firms' profitability. It indicated that whenever managers of the firm utilized companies' resources efficiently they lead the firm to increases its profitability. Besides, the study found out there is

significant relationship between MEF and profitability. Therefore, the researcher recommends that the manager should have to consider how they utilize firms' resource efficiently to have an impact on firms' profitability.

Finally, management of bottled mineral water manufacturing companies made under this study can create value for the shareholders as well as to make the firms performance by giving more consideration on the above recommendations.

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Appendix I

Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Date: 02/01/19 Time: 23:01
Sample: 2013 2017
Periods included: 5
Cross-sections included: 17
Total panel (balanced) observations: 85
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIZE	-0.012102	0.006103	-1.982906	0.0510
MEF	0.369318	0.043488	8.492465	0.0000
LQD	0.015408	0.005577	2.762721	0.0072
LEV	0.017628	0.033875	0.520402	0.6043
INTR	-0.032598	0.012424	-2.623723	0.0105
INFR	-0.005644	0.004451	-1.268087	0.2086
GROWTH	-0.086504	0.037369	-2.314868	0.0233
CAPINT	-0.135694	0.018602	-7.294445	0.0000
C	0.512138	0.100577	5.091996	0.0000

Effects Specification	S.D.	Rho
Cross-section random	0.024920	0.2502
Idiosyncratic random	0.043142	0.7498

Weighted Statistics			
R-squared	0.701088	Mean dependent var	0.061970
Adjusted R-squared	0.669624	S.D. dependent var	0.076075
S.E. of regression	0.043727	Sum squared resid	0.145315
F-statistic	22.28195	Durbin-Watson stat	1.481168
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.729862	Mean dependent var	0.101227
Sum squared resid	0.192047	Durbin-Watson stat	1.120745

Appendix II

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	8	1.0000

* Cross-section test variance is invalid. Hausman statistic set to zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
SIZE	-0.013854	-0.012102	0.000016	0.6581
MEF	0.319986	0.369318	0.003925	0.4310
LQD	-0.000286	0.015408	0.000087	0.0923
LEV	-0.019730	0.017628	0.001690	0.3636
INTR	-0.028066	-0.032598	0.000014	0.2209
INFR	-0.006732	-0.005644	0.000001	0.1789
GROWTH	-0.086903	-0.086504	0.000193	0.9771
CAPINT	-0.127806	-0.135694	0.000249	0.6168

Cross-section random effects test equation:
Dependent Variable: ROA
Method: Panel Least Squares
Date: 02/01/19 Time: 23:03
Sample: 2013 2017
Periods included: 5
Cross-sections included: 17
Total panel (balanced) observations: 85

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.558167	0.112728	4.951438	0.0000
SIZE	-0.013854	0.007275	-1.904253	0.0617
MEF	0.319986	0.076261	4.195916	0.0001
LQD	-0.000286	0.010863	-0.026354	0.9791
LEV	-0.019730	0.053273	-0.370351	0.7124
INTR	-0.028066	0.012964	-2.164913	0.0344
INFR	-0.006732	0.004524	-1.488219	0.1419
GROWTH	-0.086903	0.039866	-2.179877	0.0332
CAPINT	-0.127806	0.024384	-5.241341	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.842917	Mean dependent var	0.101227
Adjusted R-squared	0.780083	S.D. dependent var	0.091996
S.E. of regression	0.043142	Akaike info criterion	-3.208710
Sum squared resid	0.111674	Schwarz criterion	-2.490283
Log likelihood	161.3702	Hannan-Quinn criter.	-2.919739
F-statistic	13.41511	Durbin-Watson stat	1.785117
Prob(F-statistic)	0.000000		

Appendix III

Heteroskedasticity Test: White

F-statistic	0.689454	Prob. F(8,76)	0.6996
Obs*R-squared	5.751400	Prob. Chi-Square(8)	0.6751
Scaled explained SS	5.071844	Prob. Chi-Square(8)	0.7499

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 02/01/19 Time: 23:23
Sample: 1 85
Included observations: 85

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.003014	0.003639	0.828297	0.4101
SIZE^2	3.50E-05	2.41E-05	1.453701	0.1501
MEF^2	-0.000223	0.003663	-0.060942	0.9516
LQD^2	1.49E-05	5.67E-05	0.261860	0.7941
LEV^2	0.000430	0.001805	0.237912	0.8126
INTR^2	-5.40E-05	5.74E-05	-0.940333	0.3500
INFR^2	1.07E-05	2.00E-05	0.536330	0.5933
GROWTH^2	-0.003132	0.005686	-0.550870	0.5833
CAPINT^2	-0.000512	0.000534	-0.958681	0.3408

R-squared	0.067664	Mean dependent var	0.002222
Adjusted R-squared	-0.030477	S.D. dependent var	0.003320
S.E. of regression	0.003370	Akaike info criterion	-8.447960
Sum squared resid	0.000863	Schwarz criterion	-8.189326
Log likelihood	368.0383	Hannan-Quinn criter.	-8.343930
F-statistic	0.689454	Durbin-Watson stat	1.663658
Prob(F-statistic)	0.699557		

Appendix IV

No	Name of Company	Address	Ownership	Brand
1	Yes Brands Food and BeveragePlc	A.Ababa	Private	Yes Natural Mineral Water
2	Eden Business Group	A.Ababa	Private	Eden Spring Water
3	Abebe Dinku Bottled water & alcoholic Beverage Factory	A.Ababa	Plc	Top Bottled water
4	Origin Investments Plc	Oromiya	Plc	Origin Natural Mineral Water
5	AskuPlc	A.Ababa	Plc	Aqua Addis Spring water
6	DebreBirhan Natural Spring Water	A.Ababa	plc	Aqua safe Mineral Water
7	Arki Natural Mineral Water	A.Ababa	Plc	Arki Natural Mineral water
8	Yekabadi Agro Processing Plc	A.Ababa	plc	Wow natural mineral water
9	Addis Abyssinia	A.Ababa	Plc	Abyssinia Spring water
10	Alpha Water Plc	A.Ababa	Plc	Alpha Natural water
11	Moha beverage Industry	A.Ababa	S.Co	Kool spring water
12	TeshomeDinku Natural water Plc	A.Ababa	Plc	Selam Mineral water
13	Ok Botteling Beverage Plc	A.Ababa	S.Co	Feker Bottled Water
14	Promise Natural bottled water	A.Ababa	Plc	Promise mineral water
15	Aqua silva mineral water Plc	A.Ababa	Plc	Aqua silva mineral water
16	Hiwot Mineral Water	A.Ababa	Plc	Hiwot botled mineral water
17	Double S Business Plc	Alemgena	Plc	Pacific bottled water
18	Essey Business group	A.Ababa	Plc	Essey spring water
19	Fahm bottled water	A.Ababa	Plc	Fahm water
20	One water Plc	A.Ababa	Plc	One water
21	Cheers water Plc	A.Ababa	Plc	Cheers water
22	Hagere water Plc	A.Ababa	Plc	Hagere water
23	Daimond water Plc	A.Ababa	Plc	Daimond water
24	Bure spring water Plc	A.Ababa	Plc	Bure spring water
25	Fine mineral water Plc	A.Ababa	Plc	Fine spring water
26	Nestle bottled water Plc	A.Ababa	Plc	Nestle bottled water
27	Ambo mineral Water Plc	A.Ababa	Plc	Ambo mineral Water
28	Bishan Gari mineral water Plc	A.Ababa	Plc	Bishan Gari mineral water
29	Daily Spring mineral water Plc	A.Ababa	Plc	Daily mineral water
30	Ambassador mineral water Plc	A.Ababa	Plc	Ambassador mineral water

No	Name of Company	Addres	Ownership	Brand
31	Agmas mineral water Plc	A.Ababa	Plc	Agmas mineral water
32	Konjo mineral water Plc	A.Ababa	Plc	Konjo mineral water
33	Telil Spring water Plc	A.Ababa	Plc	Telil mineral water
34	Panda Business Group	A.Ababa	Plc	Panda mineral water
35	Pacific Industrial Plc	A.Ababa	Plc	Oasis bottled water